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ABSTRACT

An article on identification of preschool and school age aurally handicapped children and program development by John J. O'Neill precedes discussions of the role of the audiologist in evaluation of these children by Jack A. Willeford, and educational aspects of planning by John J. O'Neill. Three articles are presented on the role of the teacher in education of the aurally handicapped child by Gladys Whorton, James O. Kirkley, and Milo Henkel. Also discussed are an overview of the Colorado Hearing Conservation Program (David Zink), the work of the training institution (Jerome G. Alpiner), and the role of the residential school for the deaf (Armin G. Turechek). Included are the institute program and a list of participants. (JM)

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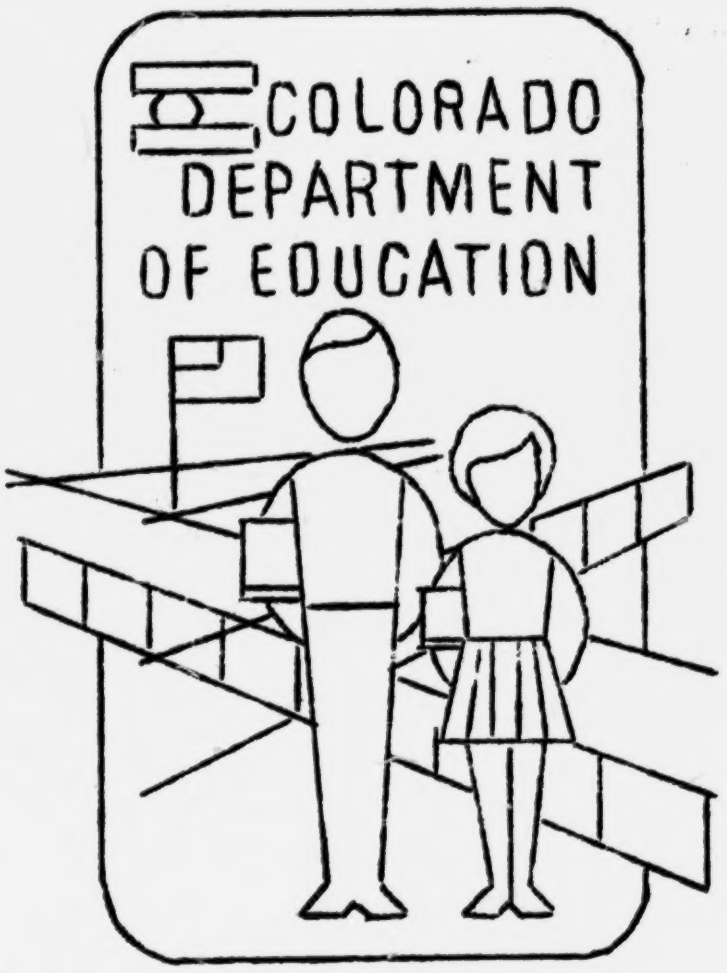

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HEART O' DENVER MOTOR HOTEL

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"IDENTIFICATION OF AURALLY HANDICAPPED CHILDREN AND METHODS AND PROCEDURES OF DEVELOPING A PROGRAM"

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FOREWORD

In the past, many of Colorado's smaller school districts and rural districts had not been able to furnish special instruction to the aurally handicapped student because of the limited number of these children in school.

More recently, however, there is a trend toward several small districts or rural districts combining their resources to provide a special instructional program for these children through Boards of Cooperative Services.

Since the aurally handicapped child is not able to take full advantage of experiences gained through the senses of hearing, it is most important that the school engage in a program of hearing conservation designed to detect and aid those pupils who have hearing deficiencies which may impede their learning.

We are happy to present to you the proceedings of the special study institute designed to acquaint the administrator with the knowledge necessary to promote programs for the aurally handicapped child.

We wish to thank all those persons who have made contributions to the institute.

INTRODUCTION

The Aurally Handicapped Institute was developed for directors and supervisors of special education and for any other educator who recognizes the need for an instructional program required for the child with an oral limitation. Forty-seven people representing school districts and colleges throughout the state participated in the institute.

Activities of the institute were designed to acquaint the participants with trends and techniques in identification, diagnosis, medical aspects, and the educational implications concerned with programs for the aurally handicapped child.

Dr. John O'Neill, Director of the Speech and Hearing Clinic at the University of Illinois, keynoted the activities with presentations from his point of view on identification, and the educational aspects of planning for the aurally handicapped child through coordinated efforts. Panels of local knowledgeable professionals representing state agencies, institutions, and school districts, through lectures and discussions, reflected current thinking and practices that exist in Colorado.

No great issues were resolved nor were any specific guidelines produced. Opportunities were provided, however, for new insights and interests in a topic significant to Colorado educators. Hopefully further exploration of the problem will develop.

IDENTIFICATION OF PRE-SCHOOL AND SCHOOL-AGE AURALLY HANDICAPPED CHILDREN AND DEVELOPMENT OF PROGRAMS

Dr. John J. O'Neill
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As we look around at the world today we see that the ecumenical spirit is at work. As we see a broadening of thoughts and a deepening of sympathies, the more necessary it is to leave behind the narrow spirit of sectarianism whether in politics, religion, science or rehabilitative activities. Also, we seem to be faced with a situation that can be best described in the words of an early pioneer in the field of psychology. He wrote this passage back in 1921 but it seems quite appropriate for 1967.

> "Old beacon lights have shifted or gone out--
> we are all up against questions too big for us.
> Hence, there is a new discontent with old leaders,
> standards, criteria, methods and values and a
> demand everywhere for new ones."

With the atmosphere being what it is, let me take you to a mythical meeting, which is being held in the mythical city of Cochlea. Cochlea is a beautiful spiral shaped city situated high in the Temporal Bona Mountains. Two and one half turns from the outskirts of the town we find the Helicotrama Hotel, the site of our mythical meeting. The conferees are in their second day of meetings. The bulletin board in the lobby of the hotel lists the meeting as being a meeting on the "conservation of hearing." Also we can note a listing of topics that are being considered at the

meeting. Three topics catch our eye. These are, "Development of a Hearing Conservation Program," "Identification of the Hearing Handicapped," and "Management of the Hard of Hearing Pre-School and School-Age Child."

Let us move on to the Perilymph room where the group considering the development of a Conservation of Hearing program is holding their meeting. If we take the liberty of looking over the shoulder of one of the conferees, we find that he has jotted down a few notes. These notes indicate that the group meeting in this room has agreed the basic purpose of a hearing conservation program is to discover hearing defects as efficiently and economically as possible, to insure that adequate medical attention is provided, and that preventative, rehabilitative and educative steps are taken.

The first day of the group's meeting has been devoted to the presentation of some background material. They have reviewed the early historical background of hearing conservation--the following basic information has been provided.

1. The first attempts at hearing conservation were made by Dr. Fowler, Sr. in 1925 when he established in New York City his Prevention of Deafness Clinic.

2. In 1933 a WPA project under Dr. Fowler's direction tested over 700,000 children between the ages of 3 through 9 years of age. 3.17 of the youngsters were found to have impaired hearing while 4.5 were in need of otological examination.

3. In 1941 Indiana passed a state law dealing with the hearing testing of children.

4. In 1946 the American Medical Association started to push for state laws which would require the routine testing of the hearing of children.

5. As of now, some 22 states have laws which require--in one form or another--such testing.

At the present time the group is discussing what they feel is a problem area. This area deals with the placing of responsibility for the operation of a hearing conservation program. It is obvious that a conservation of hearing programs can be considered as a health as well as an educational type of program. As a result of such circumstances, we have a cause for confusion. What discipline or what persons should test the hearing of children? In some states this particular area is considered as an area for medical attention, yet even if the responsibility is delegated to the medical group, we find that the actual testing of hearing is done by persons other than medically trained individuals. We may find that the testing is being done by trained, semi-trained and good-hearted attempters. In other states the testing may be undertaken by persons trained as speech therapists. This confusion has been reflected in some of the requirements that certain states have established for the school placement of youngsters. An otologist must recommend that the child receive attention. Also, he recommends what type of attention the child should receive.

It is at this point that we began to receive some indication that the natives are restless. In a sense the person who is a specialist in the handling of the hard of hearing child has been

asked to surrender his opportunity to prognosticate or to offer some suggestions. He must operate from the frame of reference that a diagnosis has been made and a prescription has been offered. At this point the hearing specialist is confused. What is his role? What is he to do?

Another problem exists for the audiologist. Let us say that he has tested a child and he finds some indications of a hearing problem. He feels he must refer the child for an otological evaluation. However, such an evaluation may be made by a general practitioner. Unless there is a badly inflamed ear drum or a mass of wax the audiologist will receive word from the parents that there is nothing wrong with the hearing and they should not bother to return for further audiological evaluation. Or, on occasions, referral to an otologist may result in the child being seen by the otologist with no return to the audiologist. Such occurrences lead the audiologist to conclude that the hearing problem is viewed as a medical problem. Also, suggestions for educational placement may be made with no indications as to possible educational problem areas. However, it would appear to the hearing specialist that there is a need for evaluation of communication potential, basic learning ability and identification of problem areas, in terms of academic training. In other words, the hearing specialist may be saying that his function is to find youngsters who require remedial assistance, not necessarily to find those youngsters who require medical help.

On the other hand, we may find the physician or the otologist saying that they are best equipped to understand the needs of the child, in terms of their overall knowledge of the child and his family.

The conferees agree that some of the difficulties mentioned may be due to the failure of each of the professions to delimit their roles on the basis of their training and experience. Also, there is a need to recognize that clinical assessment is not synonymous with educational assessment. A final point, there may not have been enough of an effort made in terms of joint evaluations of the child. In this same vein I feel there is a confusion among disciplines as to what the audiologist or hearing specialist is qualified to do. I firmly believe that most audiologists are not viewed as being interested in rehabilitative activities. Thus, we have a problem as to who should see the child--a teacher of the deaf, a speech therapist, or a specialist in learning disabilities. We have not provided for a person whose primary function is the management of the hard of hearing child.

At this point the group is taking a break. Let us quickly tour the rest of the meeting area to see what is going on. We want to return to hear more on the development of hearing conservation programs. But in the meantime, let us see what is going on in the other meeting rooms. Going on down the hall, we stop at the door of the Corti room. This group is milling around enjoying a short break.

Listening in on several of the conversations, we hear that the group has been working hard at resolving several questions that were raised in reference to identification procedures. We hear such expressions as follows:

1. How soon should we test them? The earlier the better.
2. Where are we going to conduct these tests? Who will give them?
3. What levels should we establish for referral?
4. Should we use the ISO Standard?

This all sounds interesting--we want to come back to this session or at least look over the notes of some of the participants.

We look across the hall and see that there is a meeting in the Endolymph room. We cautiously open the door and find we are listening to a presentation that deals with the Management of Pre-school and School Age Children who have hearing difficulties. Several expressions catch our fancy, such as "We need to get away from the application of what is available and get to what is needed." "Is language the key problem? If it is, then we had better start to do something about training personnel to know something about it as well as how to provide suitable training." "Aren't we mislabeling the problem?" and, "Why call it the problem of the hard of hearing--isn't it a learning disability?" The chairman has indicated that there is no available space in the room. So let's head back to the meeting on Hearing Conservation. After hearing the last words of a speaker, we should give some thought to what Skinner has said.

We know that it will be mandatory and tactful for us to return to this meeting to hear what conclusions have been reached.

Upon our return to the Perilymph Room we find that the group has returned to its discussion of the Development of a Hearing Conservation Program. We find that during our absence the group has come up with a group of symbols to represent their thinking about the goals of a hearing conservation program. The symbols are as follows--F^2, T^2. Unraveled this symbolization means--find, followup, treat and train. We also find that the group has agreed that a program of hearing conservation is to be considered as both a health and educational type of program. The problem now before the group is the deciding of who should assume the responsibility for the operation of the program--or can parts of the program be broken up and a coordinated approach be used.

Professor A. B. Gap is delivering a paper that deals with the necessary elements of a good hearing conservation program. He lists the following:

I. Planning Committees

   1. Local health personnel, school personnel, otologists, members of service clubs and members of PTA groups.

   2. He stresses the need for the development of a sound public relations program--information must be funneled to teachers, parents and school administrators.

   3. Also, publicity is an important part of this approach.

II. Education of parents.

   1. Must be made aware of purposes, need for followup.

III. Approach to case finding.

1. Should we be talking about screening or identification audiometry?

2. What type of test should we give?

3. What personnel to use--how should they be trained?

4. What type of testing environments should be used?

5. What standards should be used for referral?

6. Determine the purpose of the screening program (extent, nature and needs).

IV. Provide for otological screening (clinics--or doctors in the community).

V. Development of means to facilitate adequate followup.

1. Nurse
2. Special education
3. Social worker
4. Community groups
5. Regional clinics

VI. Development of criteria for educational placement.

VII. Determine role of health departments and educational agencies.

1. Perhaps health departments can handle pre-school private, parochial, and schools without programs.

VIII. Provide educational facilities for hard of hearing.

The chairman in concluding the day's discussion reminded the group that they must stretch their imagination. With Federal legislation now passed, pre-school youngsters are being brought into the realm of public education. Also, cumpulsory education laws are being passed in some states. Also, should we devote attention to the child who may not have a hearing loss but does have difficulty in processing auditory information?

The purpose of a keynote address is to lay some groundwork, stir up some thinking and, in some cases, stir up some controversy. I hope I have accomplished at least one of these goals. I hope I may have stimulated some of you to say to yourself--key--ripes what does he think he is saying? Sooner this, than--key--ripes what did he have to say?

"THE ROLE OF THE AUDIOLOGIST IN EVALUATION OF THE PRE-SCHOOL AND SCHOOL-AGE AURALLY HANDICAPPED CHILD"

Jack A. Willeford, Ph.D.
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Colorado State University

One of the most challenging problems in the entire field of communication disorders is that of developing standardized methods of measuring hearing in young children which are comparable to those used with adults. The field of clinical audiology is still in a relative state of infancy and emphasis to date has centered on crystallizing basic measurement techniques for adult subjects. The reason for this situation is that adults can cooperate more fully than young children and greater reliability can be placed on their performance. Adults are simply easier to work with and can relate psycho-physical experiences more meaningfully than children. These factors help to explain what, on the surface, appears to be a provocative paradox since it is with children that we stress the importance of reliable assessment as early in life as possible. Stated differently, we have traditionally emphasized early and reliable identification of auditory function in youngsters, whereas we have developed, and placed greatest confidence in, techniques developed for older individuals. Thus, the audiologist is faced with the task of attempting to interpret the auditory function of children in terms of standards established for adults. In the process it is necessary to consider such related variables as developmental factors, test conditions, language

function, etc. in order to specify the child's auditory status.

Numerous test techniques have been developed which are, for the most part, modifications of adult measures. Moreover, some of these procedures have lead to highly successful results in certain children, but in the final analysis no universal method of pediatric audiometry has been developed. That is, there are no widely accepted or widely employable methods that can be taught or passed on from one clinician to another which have the universality and stability of audiometric methods used with adults. Perhaps the most universal axiom of pediatric audiology would be that "it is an art which entails ingenuity, adaptability, good judgement, clinical skill, discerning observation, and careful interpretation, all of which are inversely proportional to the child's age."

My purpose this afternoon is to examine some of the general principles involved in the evaluation process as a preface to a review of the many ingenious albeit non-standardized measurement procedures which Dr. McCandless will present.

A useful approach to understanding any problem is to isolate and analyze its fundamental properties or variables. As far as pediatric audiometry is concerned we can identify these variables as the basic factors that determine which clinical techniques could and should be applied. Let us now examine what I consider to be some of the more prominent variables involved.

AGE: Age is obviously a variable which must be considered at the outset,

and dictates that one must operationally define the term "children". It is common practice to establish two general categories of children: those of school age, and pre-school youngsters. This practice is exemplified by the title of this panel. Theoretically, this approach separates children who are six years and over from those who are less than six. The assumption is that the school age child can successfully participate in adult audiometric procedures. Generally speaking, this assumption is justified on the basis of clinical experience.

The pre-school group, however, must be further sub-divided. It has proven practical to consider those children three years and above as one sub-group, and those below the age of three as another. This division has resulted from the type of tests that have been found practical for these age levels. I am excluding discussion of the neonate, and restricting my remarks to children that we can evaluate extensively.

There are several qualifications that affect the factor of age. They may be considered modifiers that alter the criterion of age in determining which auditory tests will be useful. They include intelligence, attention span, motivation, how well the child can adapt to the clinical environment, degree and type of hearing impairment, the age at onset of impairment, and degree of language acquisition. The latter factor has probably received the most emphasis although it is intrinsically related to one or more of the other modifiers. For the most part we have assumed a great deal of verbal capacity for hearing tests with adults. When a child does not have speech or auditory language, or if it is limited, this causes two basic difficulties: 1) speech responses cannot be used, and: 2) verbal

instructions are precluded.

When one considers these factors the question arises as to how many of them need to be analyzed before we administer an audiometric examination. The answer appears to be that any of the techniques presently employed must be evaluated in terms of all of these variables. It is highly probable that in many instances where we experience "clinical failures" (I'll bet you thought it never happened), we have been unsuccessful because we didn't have adequate knowledge of the child's overall performance levels. In most clinical settings today, however, these factors are generally considered. In any event, it is always wise to obtain a profile of the child's performance before we make a Priori decision about which test might be most applicable for the child. It is certainly more efficient than adopting either a pure trial and error procedure, or employing a technique that is considered to be The method in a particular clinic. Indiscriminate use of psycho-galvanic-skin-response audiometry serves to illustrate that there are no procedural panaceas, and why preliminary analysis should go into this process.

The focal point of this discussion is that age, with its numerous qualifying factors, is an important basic consideration in selection of audiometric techniques for children, particularly the pre-school child.

GOALS: The goals of auditory evaluation is another important consideration. Hirsh (7) has stated three basic objectives of auditory testing:

1. Screening (detection). These tests are designed to separate two groups of persons, one that can hear as well or better than a particular standard or criterion, and the other that cannot hear

so well. The foundation of any generally used screening test is the standard or criterion relative to which the screening is done. Because different techniques are used with children, and because of developmental factors, it is frequently necessary that different criteria be established for various techniques and for different age groups. The report of the United States Public Health Survey conducted by Beasley, and other references such as Watson and Tolan (10), Westlake (11), Myklebust (9), and Eagles, et. al. (4), point to the fact that there are definite differences in "threshold" with a progression of age. This factor must be considered when determining cut-off points for screening.

2. Diagnosis. If the aim is diagnosis one attempts, at least by adult standards, to answer the question, "How much can a person actually hear, or what degree and what kind of hearing loss is involved?" When we state the degree of impairment we are only describing part of the patient's auditory status. We must also be able to predict the anatomical site of pathologic lesion. As far as children are concerned we are frequently fortunate if we can only assess the hearing level. Except where medical diagnosis or very positive historical information can be counted upon, we must be largely satisfied with this limited information. Needless to say, the fine details of precise diagnosis through auditory tests are far from being perfected in adults. Moreover, many of the special tests designed for this purpose are often not applicable to children. Therefore, in terms of audiometry alone,

disregarding medical and historical information, we are rather limited in the contribution we can make to detailed otologic diagnosis.

3. Therapeutic evaluation. The ultimate aim of all audiometric evaluation should be in terms of possible habilitation or rehabilitation. Advice must be given concerning medical or surgical, prosthetic, and educational treatment. It is obvious that the answers to these questions are closely related to the diagnostic information. Audiometric evaluation may also be used to monitor how much progress has been made therapeutically. For example, noting hearing level after removal of cerumen or following surgery, noting the effects of auditory training on speech discrimination, etc. Generally speaking, the same techniques that are employed for diagnostic purposes would be applicable to therapeutic evaluation.

Type of Stimuli. As with all audiometry, the type of stimulus is an important consideration. Gross sounds, familiar sounds, pure tones (standard, warbled, and pulsed), speech (standard and modified, broad spectrum and narrow-band) sounds have all been used in audiometry. The type of stimulus chosen is frequently related to the particular technique or method of testing used, and will probably be discussed by Dr. McCandless. However, I don't want to dictate the course of his remarks and I will be glad to comment further a little later if time permits and if there is an expression of interest. However, the type

of stimulus one employs should be chosen with a given child's developmental and performance level in mind.

Methods of Testing Available. It has been customary to speak of formal vs. informal methods of testing. Let us consider these two classifications briefly.

a. Informal tests: Barr (1) has designated informal tests as those which are designed to give a general conception of whether or not hearing impairment is present, without threshold determinations. In a sense, then, the informal tests coincides with "screening," if we consider their aim. The characteristic that makes them different as a method is that they are not standardized. Other characteristics of informal tests include:
1) the child's active participation is not necessary; 2) the responses are compared to normal responses; and 3) the test sounds are usually noise, complex ringing sounds, voice, or familiar sounds.

Barr has pointed out several sources of error with informal tests. Among them are variation in strengths of sound produced by different instruments, difficulty in estimating the distance between the sound source and the child's ear, varying acoustic conditions in the test room, and the fact that optimum auditory acuity is rarely represented.

The latter element is related to the fact that, usually, the sounds that we pay attention to are above threshold. We do not become conscious of them unless they are of increased intensity,

unusual character or immediate significance. Barr says that the meaning of sound, rather than its intensity elicits the reaction. This is an important point that often may be overlooked in deciding which stimuli to use, as well as how to interpret the results.

It is important to remember that informal tests are particularly dependent on clinical skill; that a problem arises in interpretation of lack of response; and that they do not provide the detailed information necessary to the subsequent education of a child with impaired hearing. Knowledge of the developmental aspects of response to sound are needed for interpretation of informal tests. Gesell (5), Gesell and Amatruda (6), Ewing (2), and Ewing and Ewing (3), among others have attempted to provide us with a picture of the developmental sequence involved with auditory experience. The Ewing's findings, though probably well-known to most of you, can be summarized as follows:

During the first three months of life infants seem to respond more readily to percussion than to voice. The responses noted were reflexive in nature. Quiet voice is more effective than loud voice. During the fourth to sixth months voice gained preference over percussion as an adequate form of stimulation.

During the second half of the first year learned responses replace reflex actions. Children of this age are able to recognize "meaningful sounds," and voices attract their attention. They localize sounds by turning the head and eyes.

During the second year of life (12-24 months) simple speech

tests are found to be suitable. Although whispered speech is not effective, quiet speech is more successful than loud speech in attracting attention. The children of this age group tend to ignore loud percussive sounds.

For the ages 2-3 years speech and voice tests still proved to be of value. Frequency responses were determined by the use of pitch pipes. They found that children could now localize sounds well, and that reflex reactions were rare.

Contrary to rather overwhelming experimental and clinical evidence by some authorities, the Ewings found pure-tone audiometry completely unsuitable for children from 3 to 5 years. They attributed the failure to short attention span and lack of interest. Vocalizations and whispers were found to be the most effective forms of stimuli.

b. Formal Tests: Barr states that formal tests are those which measure hearing through a standardized procedure. Obviously there are certain variations in standardized procedures, but it is the aim of all formal tests to use a specific set of basic operations. Formal audiometry can be further sub-divided into two types, those requiring active cooperation on the part of the child (subjective or cooperative), and those that do not ("objective"). The subjective type includes standard pure tone audiometry, speech audiometry, and the vast majority of special tests used in diagnostic audiometry such as loudness balancing, automatic audiometry, measures of adaptation, tests using masking, and others. As noted

previously, these tests are largely dependent upon verbal instructions and a mature organism, yet they are the most important in terms of diagnostic value for identifying type and site of lesion. The question that arises is, "How early do we need to make this kind of prediction?" I imagine most audiologists would say, "the earlier the better."

The "objective" tests involve electophysiological measurements which are independent of the listener's report of what he hears and largely independent, as well, of the examiner's judgement of the subject's behavior. Theoretically, they depend solely on measured responses associated with a stimulus.

Other Considerations: A number of other considerations are also important to the evaluation process which merit at least a brief review. I have alluded to some of these factors earlier, but would now like to stress them a little more emphatically.

First of all, I believe that assessing auditory acuity is an art, and one that assumes clinical skill which develops with accumulated knowledge and experience. As an example, it takes students in training a considerably longer period of time to gain proficiency in evaluating children than it does with adults. This statement is certainly true of subjective-type audiometry and is frequently true of objective measures as well. Even when the basic mechanical skills of audiometry are learned, one must prudently utilize information gained from the case history and from observing the child in the interview situation. A meaningful case history and insightful observation are frequently the factors which determine the

degree of success achieved in the evaluation.

Having an appropriate stock of motivating clinical materials available (toys, pictures, etc.) is also important; but they too must be employed judiciously so that the child is not overly stimulated. You need his cooperative participation for procedures which involve conditioning, but he should not become so engrossed in the activity that he ignores the auditory stimulus. The important thing is that you do not destroy his listening "set". Timing in presenting stimuli is also important to the listening "set" in order that the child does not adapt to a bombardment of stimulation, and so that a true response can be differentiated from a chance behavioral clue.

One must also work rapidly since the attention span is so short in younger children. Alertness to the child's boredom with a selected activity can be critical and should suggest that the activity be modified in some way in order to sustain interest. Similar alertness should involve the test stimulus, since many children do adapt rapidly to most auditory stimuli. Thus, the clinician may need to shift from one type of stimulus to another periodically.

Modification of basic test procedure may also be found necessary. There may be need to limit frequency exploration (say to 500 and 3000 Hz in one ear - do the same in the opposite ear - then obtain the remaining frequency data if the child is still cooperative), or shorten the process of obtaining threshold values. After employing standard audiometric procedures with the initial test frequency - a procedure designed to let the child gain some experience with the stimulus (8), acuity for subsequent

frequencies may be obtained by approaching threshold rapidly in a purely ascending fashion. It has been observed that a child's initial responses to stimulation presented in this manner are generally very close to thresholds which may be later obtained by considerably more laborious and deliberate techniques.

In addtion to behavior clues obtained through observation (does he attempt to lipread, does he misunderstand commands given in low voice, does he ask you to repeat verbal messages, etc.) it is helpful to note whether he uses his visual and tactile modalities in a compensatory fashion. Vocal quality, social maturation, motor performance, personality pattern, and response to amplification are other factors which often provide useful clues to the evaluator. Such information may be obtained both through observation and formal measurement techniques.

There are still other aspects such as the role which parents or siblings may play in the evaluation process, but time does not permit me to examine all of the possible considerations one should exercise. However, I would hope that this discussion has made obvious the fact that the auditory evaluation of children is a complex process. Nonetheless, it should be a stimulating task to the responsible audiologist, and it <u>is</u> to the successful clinician. Finally, synthesizing and communicating the information obtained is, in my opinion, the key responsibility of the audiologist. If the diagnostic data isn't converted into meaningful rehabilitative recommendations, the clinical findings are useless.

I would have liked commenting on the important areas of the parent interview and the counseling of parents, and interpretation of response

behavior (eyeblinks, breathing pattern, etc.) but feel that I have taken enough time. Perhaps we can discuss this subject later if discussion time is available to us.

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EDUCATIONAL ASPECTS OF PLANNING FOR THE PRESCHOOL AND SCHOOL-AGE AURALLY HANDICAPPED CHILD

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Before starting my discussion of hearing problems and their management in the public school setting, I would like to present some reservations I have about the present approach to hearing problems. I feel that we have not given too much considered thought to the public school hearing program. As a result, there are a few problems that need to be resolved. Also, I feel that we should give some consideration to a new approach to hearing problems in the school.

One of the first problems that needs to be resolved involves the determination of whether primary attention should be given to the consideration of a hearing loss as a medical problem, a clinical problem, or an educational problem. Providing an answer to this question will help to determine the nature of testing and therapy procedures.

Other questions need to be asked, such as, "Does the presence of a hearing loss imply the presence of a language problem?" Another question that needs exploration is "What specialist should be responsible for the hard of hearing?" This question needs to be answered if we are to undertake a meaningful followup and educational program.

A final question deals with the problem of responsibility. Should the public schools be moving into a preventative program? At first glance the answer may appear to be a resounding "no", in that prevention is considered

to be a perogative of the medical profession. However, if we buy the idea that a hearing loss may bring about problems in communicative behavior, I feel that we will have to introduce another dimension to the preventive approach.

It would also appear that the qualifications, and thus, the professional role of the person who is to work with the hard of hearing child has been determined by certification patterns, national as well as local, rather than by the jobs they undertake.

Answers to these questions will come with an appreciation of the nature of the hearing problem. Or better yet, the appreciation of the fact that when we speak of hearing problems we should keep in mind that we may be discussing two concepts: similar persons with different types of hearing problems, or dissimilar persons with similar hearing problems. This statement implies that hearing difficulty should not be viewed as lying along one continum but that we are talking of several continua. These continua would be severity of loss, age at which loss occurred, and the nature of the communicative difficulty.

Determination of the Problem

It would appear that we are moving in the direction of more intensive and extensive screening tests. Also, referral procedures after failure of a screening test are becoming more sophisticated and meaningful. The referral to the otologist should be one of two referrals, if we are to assume that a hearing loss has two areas of importance. The audiologist should also be placed in the public school picture.

Once a person has been defined as being hard of hearing, two questions need to be answered. These questions are: "Can he be helped?", and "If he can be helped, what approaches should be used?" The answers to these two

questions will be gained from the results of the diagnostic workup. If such results are to be meaningful the examiner must have gathered information that includes not only the estimation of the type and extent of the hearing loss, but also an estimation of general communicative ability and motivation as well. It should be noted that such a statement indicates that the examination routine should involve more than pure tone and speech audiometry. It is assumed that evaluation has been made of lip-reading ability, combined auditory and visual reception, communication set and general motivation. Information should have been obtained also from the child or parents in regard to communication trouble spots--situational, personal and phonetic.

In attempting to assist the person who has a hearing loss, there are some four areas that are basic. Any therapeutic approach for the hard of hearing basically is aimed at accomplishing one or all of the following: making sound louder, making sounds more meaningful, developing communicative efficiency and awareness, and developing an adequate self concept.

In viewing each of these areas, it is possible to associate certain rehabilitative procedures with each of the areas listed above. For example, sound can be made louder by means of a hearing aid. Also, middle ear surgery tends to restore the amplifying function of the middle ear. Sound is made more meaningful through aural rehabilitative procedures where the individual is given restraining in listening, especially with amplified sound. Also, by means of lip-reading, another sensory avenue is introduced to help make communicative signals more meaningful. The development of communicative awareness is accomplished through an analysis listening procedures, situational practice and the development of a set to be ready

to receive information. The development of a functioning self concept will require counseling and, in some instances, psychodiagnostic and psychotherapeutic approaches. Before discussing each of these areas it would be wise to describe testing methods that may be used in the evaluation of each of these areas. Evaluation is important not only as a determinant of the individual's capabilities, but also to assist in the evaluation of rehabilitative procedures. Here we are talking about a pre and post test situation. We will have gathered some data that tells us something about the child's level of performance in the areas discussed above. If we give him the same tests again, after a period of therapy, we should be able to obtain some quantifiable estimate of improvement.

Prognostic Evaluations

Speech audiometry will yield measures that relate to the effects of loudness upon speech reception and speech discrimination. The results of such testing along with the results of pure tone audiometry and advanced audiological tests will provide the audiologist with information about reaction to the acoustic signal--pure tone and speech. It will also assist the examiner to determine if the hearing loss is of the type that can be alleviated by amplification alone.

In attempting to evaluate the meaningfulness of sound, several areas need to be considered. Basic consideration should be directed toward the determination of how well connected discourse is understood. Here we are interested in perception rather than mere sensation. Thus, our test materials will involve phrasal units, sentences, paragraphs and story units. Correct recognition of such materials will indicate the use of visual as well as auditory signals, and integration as well as reception. This implies test of auditory reception, visual reception and combined reception.

However, it should be remembered that our attention is not to be focused on test materials that consist only of words. Our interest is focused on meaningful, communicative materials.

In regard to evaluation of self concept or personality dynamics, projective types of tests can be used. The alert and trained examiner will also be able to gain impressions about the child during the taking of case history information and during general conversation.

Medical Assistance

Initial consideration should be given to the possibilities of medical assistance. In any consideration of possible therapeutic approaches, major consideration should be given to the possibilities of alleviating the condition which has produced the hearing difficulty; or consideration should be given to the possibilities of medical therapy or surgical intervention.

Many external and middle ear problems may respond to treatment with antibiotics. Also, middle ear surgery such as stapes mobilization, tympanoplasty, stapedectomy and fenestration may assist in bringing the hearing up to a servicable level.

Hearing Aids - Nature, Value and Evaluation

In a speech presented at the 1957 convention of the American Speech and Hearing Association, S. F. Lybarger offered a somewhat whimsical definition of a hearing aid. The definition pretty well defines what a hearing aid is expected to do. The definition is as follows: "A hearing aid is an ultra-small, electroacoustic device that is always too large, that has to faithfully amplify speech a million times without bringing in any noise, that has to work without a failure, in a flood of perspiration

or a cloud of talcum powder, or both, that one usually puts off buying for ten years after he needs it because he doesn't want anyone to know he is hard of hearing, but which he can't do without for thirty minutes when it needs to be serviced."

Many people mistakenly believe that a hearing aid serves to restore hearing function, i.e., hearing loss up to a normal level; or it gives selective amplification to the frequency range which is deficient. Also, these same individuals may not realize that in the instance of certain types of hearing loss that a hearing aid will distort sound. In other words, rather than bringing upon an improvement in hearing it may make speech more difficult to comprehend. Also, the desire to have a small hearing aid, or an inconspicuous hearing aid, may lead individuals to purchase a hearing aid which will be of very little benefit to them.

The selection of a hearing aid can be done in several ways. The individual desiring a hearing aid may visit a hearing aid dealer, who usually represents one manufacturer. He is the individual who "sells" a hearing aid to a hard of hearing person. Or a person can visit an audiology clinic where he will be given a complete audiological evaluation, and he will then be tested with several different models and makes of hearing aids. The audiologist will determine how much assistance a hearing aid provides in terms of changes in performance with the unaided to the aided condition. These comparisons will be made, usually, in terms of speech reception, speech discrimination, and tolerance. In some clinical settings the audiologist at this point discusses with the person or parents the nature of the hearing problem and the advisability of the wearing of a hearing aid. Referral is then made to selected hearing aid dealers where a hearing aid will be purchased.

Once the hearing aid has been purchased the child and parents should receive some training in its use. Also, the child should be given practice in developing new listening habits in that he is now listening to a different sound, louder than usual, and different in that there may be many different things to hear. The parents should realize the limitations of the hearing aid, i.e., there may be certain situations where the hearing aid will provide minimal help. Also, it must be emphasized that hearing aids can produce distortions in sound. This would be especially true for short, impulsive types of sound. Also, it has been suggested that this training can be of short term nature, or it may involve a lengthy program of aural rehabilitation.

Training in the Use of the Hearing Aid

Once the child has obtained his own hearing aid he will require some basic instruction in the care and feeding of the instrument. He should become familiar with its component parts, know how and when to change the batteries, how to insert the earmolds, and how to check "out" the hearing aid when it is non-operative. He should learn the operation of the tone control and become aware of when he will need to use the tone control. For example, he should learn its limitations and his limitations when he is wearing the hearing aid. What will he be able to accomplish in group situations, noisy situations, in a movie, at a lecture, with the telephone? The only way he can gain information about these areas is to experience them under the direction of a trained hearing therapist. By participating in an auditory training program one should develop his aided listening ability. A program of auditory training will enable him to develop a tolerance for amplified sound as well as improve ability in the reception of amplified sound. This training should also include practice

in the use of the telephone. (Will he be able to use it with his hearing aid, should he remove his earpiece and use the ear that has been fitted or should he use the unaided ear?) Only through guided practice will he be able to make such adjustments.

Aural Rehabilitation

Several terms have been used to describe the educational procedures used with the hard of hearing. Some of these terms have been "auditory training," "lipreading," "speech reading," "visual hearing," and "hearing therapy." A well-organized program should include all of the areas described above. Therefore, rather than merely concentrating on one of these areas, the audiologist should be interested in providing instruction in such a manner that simultaneous usage of each of these isolated areas occurs. Some educators view this process in terms of only one area of rehabilitative services. However, the hard of hearing person should not become a single sense person. He should develop a communicative reception system that becomes natural. Therapy may tend to make a hard of hearing person develop a concept of deficiency. To elaborate: If the person has been told that lipreading is the only avenue of approach, and he is not able to master this approach, he may become despondent and feel that his only possibility for help is closed to him. He then is left with the impression that he will never get along, and must be severely handicapped.

Aural rehabilitation involves the improvement of existing input systems (auditory and visual) or the expansion of an unused input system and, finally, the combination or integration of input systems. These activities require the production of an auditory or visual stimulus, a response by the subject, and an evaluation of the response by a

therapist. The end goal is to develop a self monitoring system by the client. Thus, aural rehabilitation has as its goals the development of efficient communication input systems and a self monitoring system by the client so that he knows what he has to do in specific communication systems, what his chances of correct reception are and what he can do to insure maximum correct recognition.

In discussing aural rehabilitation attention will be directed to individual areas such as lipreading, auditory training and speech conservation. After such coverage attention will be directed toward the combined use of these areas. As part and parcel of this sort of training, the therapist should be directing his attention toward the aforementioned goals of aural rehabilitation.

Suggestions on types of therapy will vary somewhat with the particular type of hearing problem, and the individual who has the hearing problem. The categories of hearing loss, which are being used in this discussion, relate to the average loss of 500, 1000, and 2000 cps. for the better ear. A slight loss would be on the order of 20 to 40 decibels; a moderate loss from 40 to 60 decibels, and a severe hearing loss from 60 to 75 decibels.

In establishing therapy goals, the audiologist needs to consider the following areas that need to be covered in therapy with the hard of hearing persons. Or, if we like, we might call them the goals of an aural rehabilitation program.

These areas are: (1) relating to a communication environment; (2) recognition of the essential components of communication; and (3) the learning of communication patterns the person must use. Other traditional names might be applied to these three terms. For example, training in listening would be considered under relating to a communication

environment, while visual communication and auditory training might cover the other two areas.

The results of the pure tone and speech audiometric tests will enable the examiner to designate categories of hearing losses for the purpose of therapy assignments. Three major categories can be established: slight, moderate, and severe hearing loss.

Although specific therapy approaches can be suggested for the various degrees of hearing loss, there is the danger of overlooking the individual and his particular problems. Thus, if a person fits into one of the loss categories the suggested therapies may be used. However, the therapist should always be sensitive to the individual's performance. His loss may pose problems that may require one of the therapy approaches suggested for a person with a more severe hearing loss.

Relating to Communication Environment

The person who has had a hearing loss of any duration will have lost some of his auditory awareness or an alertness for sound. This may mean a loss of awareness of background sounds, and the daily noises of our everyday world. Or, the person has lost the set to be a good listener, to be ready to receive speech to be part of a communicating environment. He may have lost a fine "listening edge," or he is not ready to interpret speech. Or the person may be easily distracted by other background or secondary sounds to the detriment of the primary message, the message he should be receiving. This can be illustrated by the situation where a person cannot focus his attention upon the conversation of another because he is being distracted by a nearby conversation, or he is listening to what is being said on a radio or television set that is in the same room.

In other words, the person may have lost auditory awareness, or the orientation to the fact that he must be ready to receive all auditory signals and translate them into meaningful communicative symbols.

The two therapy approaches that can be used would be counseling and listening practice. The counseling would involve discussion about the problems created by the hearing loss and suggestions to the person as to approaches that could be used to overcome some of the difficulties. This could include discussions of communicative limitations, adjustment patterns, and an evaluation of the person's communicative bad habits.

Listening training can be done with or without amplification. For the person with a slight hearing loss the listening practice should usually be accomplished without amplification. For persons with a more severe hearing loss, listening practice can be accomplished with amplified sound, either with a wearable hearing aid or a desk aid or auditory training unit.

The primary purposes of listening practice are to develop accuracy, consistency, comprehension, and assimilation. The listening practice can begin at the level of simple, environmental sounds which the person is to identify and associate with everyday activities. The materials can be recorded on tape and can include excerpts from sound effects records or actual recordings of various sounds. This period of training will assist in the development of an awareness of sound and give practice in gross discrimination of sound. Also, at this same time the subjects can be exposed to recordings of music to help them develop the concept of pleasurable listening.

The next step would deal with critical listening and listening under difficult conditions. Critical listening involves training in comprehension and memory span. Such training is accomplished by presenting in a

order connected discourse. The material should start off with very simple listening exercises or questions. Then longer and more difficult sentences are presented. These materials can be taken from newspaper articles or magazines. The person is asked to do several things. First of all, he may be asked to repeat, in his own words, what he has heard, or he can be asked questions about the materials.

The next step can involve the use of transcriptions from radio programs. It might be added here that local radio stations are able to provide disc recordings of network programs. A set of multiple choice questions is developed, based on information which has been presented in the program. Also, commercial recordings involving readings, or Broadway plays or musicals can be used for critical practice. The instructor can present materials from play scripts or radio programs. In this same vein parts can be assigned, if this is a group lesson, and those who are not reading the parts must answer questions about the play, in terms of the various characters and the general script.

The next step involves listening against a noise background. The noise background can consist of another recording, including environmental noise or music. It is well for the therapist to expose the listeners to a variety of background noises. The early stages of this form of listening practice will consist of listening against a low noise background. In other words the primary message will be much louder than the noise. In practice, the level of the noise is increased until it is as loud or louder than the primary message the person is expected to listen to. The subject's understanding is checked by direct questioning which can be a continuation of the practice if the instructor presents the questions over a noise

background, or multiple choice answer sheets can be used.

When this last step of listening is undertaken, and while the person is wearing his own hearing aid or earphones attached to an auditory training unit, it becomes a form of auditory training in that amplified sound is being used. Some individuals who use auditory training approach it in terms of an analytic approach in that they start such practice from the level of discrimination of individual sounds. This type of practice can involve syllable comparisons. However, it typically involves discrimination of differences between words. For example, the person may have the following pairs of words before him. The instructor will present one of these words, and the listener is to indicate which word was used.

give	live
bear	tear
train	drain
won	run
shin	chin

Here the concentration is on the recognition of consonant The same type of training could be done with only the vowels differing. The Larsen Discrimination Test may be used in such training.

Another aspect of auditory training involves the development of tolerance for amplified sounds. Many hard of hearing persons have a sensitivity for amplified sound. In most instances, unless auditory recruitment is present, this is an imagined sensitivity. The purpose of this training is to gradually increase the person's ability to tolerate amplified sound. This is an important step in that it must be remembered that amplification of sound is the hard of hearing person's passport to better hearing.

This sort of training can only be meaningful if it is done with calibrated equipment. The auditory training unit should have definite increments of loudness, so that the therapist knows what loudness level is being used. Also, he will know what loudness level is the maximal level that a person can withstand and, more importantly, what loudness level will be of maximum efficiency. At this point attention should be directed back to the diagnostic session. If the examiner has made a thorough exploration of the usable auditory area, in terms of auditory discrimination, he will be able to provide statements about the most efficient loudness level. Thus, auditory training will be directed towards the development of tolerance for this level of sound. Attention must be also directed to the development of tolerance for sudden, loud, or unexpected sounds. The person must have loudness flexibility in order to adjust to sudden increases or decreases in loudness.

Training With Reduced Cues

The hard of hearing person will be hearing distorted speech or only parts of speech. The person with a moderate to severe hearing loss can be thought of as a person who lives in a world of reduced auditory cues. Thus, any training program should provide training with reduced cues. In this manner the hard of hearing individual can learn to associate meaning with reduced auditory cues or he can learn to add visual cues to the reduced auditory input. In this way he can learn to use to best advantage a faulty auditory perceptual system.

In order to provide training with auditory signals, the audiologist needs to have some idea as to what type of distortion pattern the hard of hearing subject is working with. This type of information is difficult to come by. The use of filters, compression units, and interruptor switches

may enable the audiologist to attempt to simulate such patterns. However, he cannot be too sure that the hard of hearing person is receiving the same type of auditory signal. This data must be inferred from the results of the original audiological workup. Also, the therapist, during therapy, must be constantly questioning the hard of hearing person to obtain information about the nature of the auditory signal he is receiving.

Auditory training can involve the presentation of distorted patterns, and the subject is given training in recognition of these patterns. At this point the subject can also be made aware of the value of visual cues as a supplement to auditory reception. The subject must realize that he has only a certain amount of information he can use. Short exposure of visual materials will help him to develop the skill to synthesize materials and become more alert.

One point that needs to be recognized is that lipreading involves the use of reduced visual cues. Not all of the lip movements are highly visible. Also, the very process of continuous speech serves to provide more of a reduction. Thus, it would be well for the would-be lipreader to receive training in terms of improving his viewing ability. In essence, training is provided in visual perception, attention span and concentration. The tachistoscope is of tremendous value in such training, in that the subject is required to utilize rapid viewing and must make rapid inferences as to what he has seen.

The training usually proceeds from recognition of simple forms, to more complex forms, to distorted speech samples, to simple speech patterns, and, finally, to lengthy speech passages. The author has found that such training also seems to carry over to auditory practice and everyday listening.

A final step that must be taken in all aural rehabilitation is the development of combined reception ability. Therapy has not been successful

if the client leaves with a strong dependence on one sensory input system. In fact he is ready to leave when he no longer recognizes that he is using one specific input channel. He merely is aware of the fact that he can understand a great deal of what is being said without being aware of which sense channel is being used.

The therapy approaches described in the previous pages can be employed with adults, adolescents, and upper elementary school youngsters. For preschool youngsters and youngsters in kindergarten through second grade modifications in techniques will need to be made. These modifications do not involve changes in the general therapy approaches, but rather in terms of the level of materials being used as well as the complexities of the techniques being employed.

In the instance of preschool youngsters our diagnostic and therapeutic procedures cannot be too definitive. Of necessity, they are impressionistic. We should make use of such indices as improvement of verbal output, development of awareness and alertness, and the development of receptive abilities. We should avoid concentrating on one sense modality. The child does not learn through only one sense modality. Also, I raise the question as to whether we have enough knowledge about channel or modality capacity to concentrate on the use of only one modality.

The preschool child should be trained to be ready to be accepted into the public school system. To be ready he should show a readiness for training, an ability to imitate, an ability to conform, and an ability to follow directions.

Also, we need to place an emphasis upon language evaluation. We could use such tests as the Mecham Test of Language Development, the Utah Test, the Frostig Test of Visual Perception and the Leiter Test. What we

are attempting to do is to obtain some idea of language development. Also, we should be evaluating the broad area of auditory perception. We can accomplish this by use of tests that utilize samples of compressed speech, filtered speech, and completing messages.

In that most of these youngsters will have limited vocabularies, special test materials as well as therapy materials will have to be used. Thus, test materials will have to be of a type that is in the vocabulary of youngsters from 5 to 8 years of age.

It is obvious that I have not provided answers to the questions I raised in the first part of this presentation. I would like to offer a suggestion that may take care of some of the problems I mentioned. First of all, I think that we should approach the hard of hearing child as having a distinct problem. He should not be treated as being deaf or as a speech problem. In essence, a specialized type of therapist should work with the hard of hearing child in the school situation. He should not be assigned to a teacher of the deaf or a speech correctionist. He should be assigned to a <u>hearing therapist</u>. I do not feel that the child should be assigned to a special education type of program where the teaching of academic skills is used as a rehabilitative technique.

In other words, there is a difference between therapy and education, in terms of the aurally handicapped child. I view therapy as being directed toward work on input and output systems as they are used in basic education, while education involves training in the integration of operating input and output systems.

If we were to provide for the academic training program of a hearing therapist, we would make sure that such a person would have information in regard to hearing aids, audiometric skills and intelligent communication

patterns, and problems of the hard of hearing and deaf, and speech conservation and correction. This material could serve as a common core for persons being trained as hearing therapists and teachers of the deaf. This course material would then be followed by a branching off of the training program with specialized practicum, methods, and practice teaching in the field of interest.

I hope that I have stimulated some desire for improvement in the public school program for hard of hearing children. I feel that it is time for us to give the hard of hearing child the attention he deserves.

THE ROLE OF THE TEACHER IN EDUCATION OF THE AURALLY HANDICAPPED CHILD

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The major role of the teacher of aurally handicapped children is to prevent failure. The main purpose of early identification of deaf and hard of hearing children is to enable specialists in the field of education, through their knowledge of various educational methods and psychological principles, to prevent educational retardation and the development of emotional or behavior problems. If a child has near normal or better intelligence, a sensory deficiency, such as hearing loss, need not restrict the amount that the child can learn nor the rate at which he can learn it. It does, however, definitely restrict the way in which he must acquire his knowledge. It is the responsibility of the special teacher to understand enough about the various methods and techniques of teaching to be able to make the necessary adjustments in consideration of the amount and type of hearing loss, the child's personality and his mental ability. She must understand the power of motivation and how to motivate each individual child, the need for applying and how to apply the various laws of learning and how to present material in such a way that utilization of the child's strong points can compensate for the restricted use of the auditory sense.

It has been generally recognized that children differ considerably in their intellectual ability and public school teachers usually expect

to have to make adjustments in consideration of these variations. Unfortunately, the extent to which the various senses may be saving a child is often neglected or completely overlooked. One of the very important senses used in learning is the auditory sense. A young child with normal hearing learns speech, comprehension of language and language usage through exposure to those around him and imitation of the speech and language used by those in his environment. This incidental type of learning does not take place with an aurally handicapped child. If a child has a profound hearing loss, his auditory deficiency is usually rather quickly noted. However, children are not divided neatly into two categories--the deaf and the hearing. There are innumerable variations in the amounts of hearing loss at the various frequencies. Children may differ as much in what they hear as they do in mental ability.

There has been a policy throughout the country of providing specialized aid for children who have the most severe sensory deprivations, the deaf and the blind; but there has been widespread neglect of children who have mild, marginal, moderate or even severe hearing losses. This is very unfortunate for children with less than profound losses may, through adequate aid at an early age, never have to know the despair of failure and may never have to be labelled as handicapped children. There has been a tendency on the part of most people to consider all children who deviate from the norms as being handicapped. Thousands or even millions of children, if accurately diagnosed at an early age and if

given specialized help at the time that it is most needed, may not have to fall into this category. Special education means specialized instuction that will help a child compensate for a sensory limitation to such an extent that, except in most severe cases, he need not be handicapped by his imperfect hearing.

A totally or profoundly deaf child needs specialized instruction in special classes, taught by fully qualified teachers, for many years. He needs a program based upon the logical development of facts presented in a scientifically organized way. He must be taught what children with normal hearing learn in an incidental way. Emphasis must be placed upon the development of the various facets of language since his handicap is a language handicap. He must be taught the meanings of words and sentences and correct sentence structure so he can understand and use sentences as means of communication. He must be taught the various reading skills, especially study skills, for a large part of his knowledge must be acquired through reading and he must be able to use reading as a tool for learning. He must be able to express his ideas in written form, in case people do not understand his speech. Most children, labelled as deaf, have some residual hearing and through intensive auditory training, each child must be taught to listen attentively with the use of amplification and to discriminate between whatever sounds his limited hearing will permit. The educational program for a deaf child must include everything that is required for the normal child plus additional instruction in each of the language arts. The deaf child, more

than any other type of child, is a direct product of his teachers. To the extent that he has excellent instruction, he will achieve. To whatever extent he has inferior instruction, he will fail. He is not master of his environment for he is born into a society of hearing people and his achievement will be in proportion to the extent to which he is given an opportunity to compensate for his sensory deficiency by having stress placed upon the use of the visual sense and his innate mental ability.

The child with a severe hearing loss or the "educationally deaf" child must have a beginning program very similar to that required by the profoundly deaf child. However, this child can benefit more from auditory training. With a very intensive and well-organized program at the preschool and primary levels, he may come to be classified as a hard of hearing child. In consideration of his I.Q. and other factors, it may be possible for him to be integrated into classes for normal children at some stage depending upon the extent to which the regular teachers understand the need for and how to give the special aid that he will require for many years.

Children who have moderate hearing losses will probably need to be kept in small groups through the primary grades. They should be taught by qualified teachers of the deaf and hard of hearing or by good elementary school teachers who have a firm foundation for teaching all of the language arts and who have had several basic courses in education of the aurally handicapped child. The children in this group, with near normal

or better intelligence, should be ready for real integration with normal children at the intermediate level.

If children can have the advantage of an intensive preschool program with specialized instruction in all facets of language, it is possible that many children with mild or marginal hearing losses may be able to enter first grade with normal children. If the regular teachers have some knowledge of the special needs of these children, these youngsters may never experience any educational retardation because of their auditory deficiency.

At the preschool age, children with normal intelligence with various amounts of hearing loss may be adequately cared for in the same group. Preschool programs, for all children who have imperfect hearing, could serve as diagnostic centers to determine the amount of residual hearing, the ability of each child to utilize this hearing, the real intelligence of each child and the reaction of the child's parents to the child's deficiency. It is very difficult to evaluate a child with imperfect hearing accurately without giving him instruction and observing his reactions and his progress. The most appropriate time to begin work toward speech development and language development is the age at which children normally start the acquisition of speech and language. Auditory stimulation or auditory training should be started when the child is very young for whatever can be obtained through utilizing the residual hearing to improve auditory discrimination will aid greatly in both speech and language development.

In some cities, there is the accepted practice of placing only one type of exceptional child in a particular public school building. This permits all teachers and other personnel in the building to become well acquainted with the special needs of this particular type of child. Special teachers and regular teachers have a chance to cooperate in preparing both the exceptional child and the normal children for true integration for integration, in the highest sense, means acceptance of the individual who is being integrated. A deaf or hard of hearing child may be much more segregated in a class for normal children than in a special class for aurally handicapped youngsters unless he is really accepted and understood by both the normal children and the teachers of the children in regular classes. Special classes, in regular public schools, should not be considered as places to put handicapped children in order to get rid of them, to get them out of the regular teacher's class so she will not be plagued by their existence unless we are considering the most severe or multiply handicapped cases who should in fact be custodial subjects. Special classes for the acoustically handicapped should be considered as opportunity classes where children, in small groups, can be given truly individualized instruction and special help in order to prevent educational retardation or academic failure, emotional disturbance or the development of antisocial behavior. The goal should be to prepare children with a sensory limitation to compete successfully with normal children in spite of the hearing deficiency.

The goal set by educators of aurally handicapped children should be to help the profoundly deaf child acquire language skills up to his full

capacity by stressing both reading and writing as well as other facets of language, to move the "educationally deaf" child or the one with a severe hearing loss into the category of a hard of hearing child by utilizing his residual hearing along with all other senses. Children with mild, marginal or moderate hearing losses should be moved gradually into situations where they will be required to compete more and more with children of normal hearing, according to the amount of loss, intelligence and other factors. In every case of hearing deficiency, the essentials for adequate educational achievement are early diagnosis; adequate specialized instruction at an early age; and awareness on the part of parents, teachers and school administrators of the specific needs of these children.

From the economic standpoint, preventive instruction is likely to be far cheaper than neglect of exceptional children during their formative years. It is difficult to estimate the loss in monetary terms when children are allowed to fail for many years because of lack of specialized instruction at the appropriate time. Costs of rehabilitation services, the expense of dealing with dropouts or delinquents, and welfare payments because individuals are unable to compete economically in their social order may be far greater than the cost of providing preschool programs and specialized instruction for all children who have imperfect hearing at the time that help is most needed. It is far more economical to spend money to prevent educational retardation than to rebuild a child's life after he has acquired additional associative handicaps to accentuate the effects of the original handicap of limited auditory acuity.

THE ROLE OF THE TEACHER IN THE EDUCATION OF THE AURALLY HANDICAPPED CHILD

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In this attempt to delineate the role of the teacher of the aurally handicapped I would like first to designate two categories or two roles; (1) that of the lower school teacher, and (2) that of the upper school teacher. With the hearing impaired, I would be hard put to say where the one stops and the other begins. Not so facetiously I might say that the role of the lower school teacher is to function with "extraordinary intellectual power as manifested in creative ability." That, by the way, is one definition of a genius. The role of the upper school teacher differs somewhat. She or he needs to be "a being with more than natural attributes and powers." And that happens to be one definition of a god.

Let me repeat that these descriptions should not be taken too lightly. But more seriously, let me pursue briefly this distinction between the teacher who assumes responsibility for the formative or developmental years of a pupil, and that teacher whose primary concern seems to be for the content of her subjects (and you may take that in whatever sense seems appropriate). The first is responsible for establishing the means, the "how," the capability of; whereas, the second has an area of responsibility concerned chiefly with the "what," and the "why," or the capacity for education. Again I say there is no clear cutoff between these two - assimilation is developmental. Dr. Harriet

Kopp, Principal of the Detroit Day School, says that "Education occurs best in a flexible, flowing situation as the individual moves from group teaching to individualized learning with strong internal motivation derived from successful learning experiences."

All teachers are aware of the distinction between teaching and learning, but are they being directed or guided by their knowledge of the distinction? It is not enough just to be aware. The teacher must be constantly conscious of and in agreement with this concept of her role. In a sense, then, she needs to perform a diagnostic function as well as a remedial function. I am not too sure of this, but I want to say that she seems to need the freedom to be completely objective.

On what basis do we judge the teacher of today's aurally handicapped child? Is it true that we seem satisfied if she had a degree, a certificate, skill at putting on a demonstration and making information available? Evidence seems to indicate that this is so. Failures and limited abilities in the language arts (reading, spelling, speech, writing) for the hearing impaired, as well as the unimpaired, are taking a tremendous toll when viewed in the light of the pupil's potential. Someone, perhaps Dr. Kopp again, has said that the term "teacher training" is an indictment because it presumes the learning of techniques by rote and recipe. I can say quite vehemently that I am in complete agreement with the intent of this institute and particularly this panel. There is a need to clarify and establish more adequately the role of the teacher of the aurally handicapped. This, however, would be only the first step. Next would follow the business of selecting the individual with the qualifications to assume this role.

The current emphasis on research in the areas of linguistics, learning theory, educational media, etc., behooves the teacher, as well as all educators, to evolve with and adjust to the findings or demands. We are unquestionably in an era of educational proliferation. In such a period it does seem presumptuous for one even to attempt a statement on the role of today's teacher. I might offer one further definition of this person as being in a transitional stage, but how can you improve on a genius or a god? Be this as it may, because of this revolutionary nature of our problem, I wish now to limit myself to a single aspect of the role of the teacher. This is a characteristic element or parameter which, in this day of change, might be labeled as constant rather than transient. I do not have a specific name for this element, but it is a tangible, potent quotient. The teacher so fortuitous as to possess this element can much more readily transmit, or communicate, or induce a desire to learn on the part of the pupil. And this, I contend, should receive major consideration in any effort to delineate the role of teacher.

Again I ask what criteria are we governed by as we evaluate the qualifications of our teachers? Is the emphasis on credentials effectively and efficiently proportioned? I do not intend to suggest that there should be less effort toward professional growth. I am sure we all have high respect for those individuals who are challenged by graduate programs. I do suggest, however, that there seems justification for a reconsideration of these requirements if we are to have adequately prepared teachers for today's children. Is there a need to introduce new areas of study as anticipatory to the role of this teacher? And perhaps even more imperative, shouldn't teacher candidates be more carefully

creened? Everywhere there are tests and measurements. But it appears they are nearly all aimed in one direction - at capacity and achievement. Aren't there other equally pertinent facets of value in teaching? What about the element referred to earlier? What programs are available, what courses offered, for the development of an individual's behavioral and emotional tendencies? Are there adequate opportunities for a teacher to work for distinction or excellence of personal and social traits? Or are they subordinated to insignificance by comparison with academic excellence?

Something strikes me as rather odd as we check the various categories of the exceptional child whom we find spoken of as those with "some deviation from the normal." Briefly a listing which came to my attention is as follows: mentally gifted, mentally retarded, visually handicapped, auditorily handicapped, children with speech defects, children with special health problems, emotionally handicapped, socially maladjusted, crippled, neurologically impaired, and children with reading disabilities. Now, the odd thing is this - and it may sound asinine or abstruse to some of you. But if we were to draw an imaginary line signifying the normal, and indicate all above and below as abnormal, we find one positive category above (the mentally gifted), and ten more or less negative categories below.

Another question. Would it be completely unrealistic to attempt antithetical classifications for these? We already have mentally gifted as opposed to mentally retarded. We then might have the visually gifted as well as the visually retarded, the auditorily gifted and the auditorily retarded. Is there any sound argument against theorizing about praise, encouragement, and possible grouping for those who demonstrate above average use or efficiency of vision, of hearing? Are some children

better listeners than others? When we determine that children have 20/20 vision, does this imply that they are able to distinguish size, shape, and colors with equal speed and accuracy? What about perceptual span, memory span? We readily classify children with speech defects, but what are we doing about the child with gifted speech, beautiful enunciation, formants, voice quality, blending, etc. Why not emotionally gifted as well as emotionally handicapped; socially well-adjusted as well as the socially maladjusted; those with reading capabilities as well as those with reading disabilities.

I realize that I have strayed somewhat afield, but isn't there a point? Have we handcuffed ourselves by rigid adherence to a so-called system, a system for seeking defects rather than to espouse the positive. I think we might do well to revitalize a song of some years past, "Accentuate The Positive."

Getting back to that specific qualification of the teacher which tends to spur the pupil to effort, we find something of a parallel situation existing where behavioral, emotional, personal, or social factors are considered. We have psychologists, psychiatrists, psychoanalysts. Again, let's draw that imaginary line where the normal might exist and see what the "headshrinkers" have done for you and me. A cursory examination turns up nothing above. But looking in the opposite direction, oh boy, we find psycho, schizoid, paranoid, neurotic, catatonic, autistic, and on and on, more-or-less ad infinitum.

Is there a connection? I think that what I am trying to say is that there is a need, in our consideration of the role of the teacher, to give careful thought to behavioral objectives. It is not so much a matter of

how the administrator looks at a teacher's credentials, academic excellence, and such. Somewhere in the scale of values it seems of equal importance for the administrator to look with near equal meticulousness at the teacher as a person. This should be easier. It's not so much how the teacher reacts to the pupil as it is how the pupil reacts to the teacher. The role of the teacher I have in mind cannot always be assumed by the individual with a pocketful of credentials and a mind full of information. There is the matter of a prerequisite. It is that elusive factor which over the years has been most influential in setting apart teachers of high honor and wide acclaim. They knew how to challenge, how to influence, attract, inspire, and to induce the learner to efforts that were in effect commensurate with his potential.

I am quite willing to admit that this sounds somewhat idealistic. It may be a curse or it may be a blessing. I haven't yet found out, but I have always and will always maintain this image of a teacher. I am not so naive as to expect or seek a utopian situation. I am thoroughly convinced that the role of the teacher <u>can</u> be as unique and powerful an influence as will be met by the hearing impaired school child of today.

And now in conclusion let me summarize what I think I've said. First, the role of the teacher varies with the level (age, status) of the pupil. For the lower school child, "pupil" is the appropriate designation and the term "teacher" can be literally interpreted. "Student" is a preferable term for the upper school enrollee, and teacher becomes something of a "motivating mediating moderator." The first is concerned with establishment of an achievement capability in the pupil, whereas in the older, concern is generally for achievement per se, or knowledge. It was

also indicated that when the desire for self-realization is firmly established, the student will have a parallel self-sufficient sense of responsibility so that aptitudes, abilities, aims, and interests can more readily be achieved.

There are indeed many other specifics that are relevant to the role of the teacher. The philosophy of the school must be reckoned with as well as the philosophy of the teacher. It is also imperative that this be a compatible wedding. Perhaps nowhere in the field of education is this term more meaningful and influential. And finally the services available, the conditions, equipment, media, and materials with which the school is supplied, are all important factors that regulate the role of the teacher.

THE ROLE OF THE TEACHER IN THE EDUCATION OF THE AURALLY HANDICAPPED CHILD

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I have been asked to discuss my views as to the role of the teacher of hearing impaired children. This, naturally, leaves the discussion unlimited. In reviewing the many possibilities that a person might discuss, I have considered the following many-faceted characteristics, responsibilities, and "roles." The good teacher of the hearing impaired is a breed apart. She (I shall use the feminine pronoun throughout this discussion, since we more frequently think of the teacher in the elementary school as a woman) is a teacher, an educational diagnostician, a family and child counselor, an imaginative creator, an educational catalyst, a theorist, a motivator, a practical planner, a researcher, a total community participant, ad infinitum. She must live her role and still try to maintain a semblance of personal life.

It is always difficult to suggest that this person or that person should become a teacher of the hearing impaired. It is difficult to judge personal characteristics in a person and how these characteristics will interact with hearing impaired children. I DO know this: Although the teacher of the hearing impaired needs a thorough knowledge of the special subjects such as the language, speech, and speech reading, she also needs a full range of liberal arts background and a knowledge of how normally hearing children grow, develop, and learn. An absolutely

essential quality is a sense of humor. She will need to laugh at her own foibles and mistakes as well as to laugh <u>with</u> children. She dares not to have a false sense of pride. She needs to have a warm quality (surely a nebulous quality, but one which true teachers will recognize) and an ability to build strong rapport with children by her interest in them and for them. She needs to be able to maintain a teacher-pupil relationship at all times, whether it be in the classroom, in a casual meeting on the street, or in a completely relaxed social situation. The teacher of the hearing impaired needs to have her material well-planned and well-organized, but here she must not be rigid. Many teachers believe that following an exact pattern is teaching. It may be sometimes, but, all too often, all that emerges is rigidity. Often the child learns in spite of such a setting and atmosphere. This is not to the credit of the teacher although she may claim it. Certainly the teacher needs to teach, not admonish: "Go ye forth and learn!" She needs to teach and to lead the children into the realms of the wonders of knowledge, but she cannot force them to learn. Motivation? Of course. However, once something has been taught, and I do mean TAUGHT, the children should be held to that taught principle, not rigidly, but constantly. It is also totally unfair to believe as do some educators of the hearing impaired, that one concept, be it a language idea, be it an academic subject idea, or be it a social concept, must be taught and taught thoroughly before proceeding to the next concept. These all must be developed gradually, one concept laying the base for the next, and each concept dovetailing with others so that the child is developing mentally both horizontally and vertically. The process of learning is that of an ever-widening upward spiral.

The teacher must be an educational diagnostician. By this, I simply mean that she must be constantly alert as to what and how much each child in her class is learning. She needs to be totally aware of what weaknesses the child has and to find or construct materials to strengthen the child in the weak area. She will find the need to adapt materials of high interest an absolute doctrine in her approach to teaching. In this she becomes the imaginative creator. She will need to be a theorist in knowing just what psychological principles to apply at the proper times. This practice needs also to become her alter ego so that she has her knowledge ready at a moment's notice. It cannot be obvious, or the whole role of the teacher is lost. There are innate qualities in a person, such as we mentioned earlier, which either must be present within the teacher as a part of her molar personality, or the teacher will be only a middling teacher.

The teacher's role asks that she be an educational catalyst. She is the one through whom the children are impelled to learn, to speak, to build the language that is the very life blood of the child's total approach to living. We have all heard of some inspired teacher who has been the motivating factor in an individual's life to impel him to great heights in a vocation and life itself, such as we find in Emlyn Williams' drama of the mining area of Wales, in "The Corn is Green." The inspired teacher works tirelessly, because she herself is goaded internally by the fact that "there is so little time." She derives her satisfaction from seeing that she is the catalyst in the development of a mind.

The teacher is a researcher. She will find her encouragement from the fact that she sees learning in the process and is humbly thankful that she is a participant in the learning process of the child. She builds new materials and tries them in a controlled situation, even

refining. Perhaps the controlled variables are not what one considers necessary for a doctoral dissertation, nevertheless it is research and important research. She needs also to share her successes with others. The successful teacher shares with her co-workers her successful materials, but she is not one to foist them upon others.

The teacher will find a need for total community participation, for in so doing she will be setting a pattern that her students or pupils will do well to emulate. Again, she can lead and push to a certain degree, but she cannot force. As a community participant, she will be a valuable adjunct to the family and to the child. She will need to have basic counseling techniques in mind, so she can work with the child as he comes to her with his problems. She will need them even more so when she is confronted by the parents, angry, or simply begging for help to understand and help their child.

Our teacher's job then is not one from nine to four daily, but twenty-four hours a day if necessary, and not five days a week, but seven if necessary. This picture of the teacher of the hearing impaired is only scantily handled here, but it does intend to show what we need in such a person. No matter what, she will never be totally replaced by teaching machines, although she may use them as valuable teaching aids.

Perhaps we are asking for angels in the guise of teachers, but perhaps we have them also. It is our responsibility to see these qualities in our young people and to counsel and guide them into our field of specialty. Allow me this short quotation to conclude these few ideas about the responsibilities and the role of the teacher of the hearing impaired. James Thomson, the Scottish poet who lived in

the first half of the eighteenth century stated the idea succinctly when he wrote:

"Delightful task! to rear the tender thought,
To teach the young idea how to shoot."

OVERVIEW OF THE COLORADO STATE DEPARTMENT OF PUBLIC HEALTH HEARING CONSERVATION PROGRAM

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There is sometimes confusion between the terms "hearing conservation" and "identification audiometry" - terms which are at times used synonymously. Melnick (1964) describes the former as providing medical, surgical, audiological, educational, and related services required to prevent and overcome an impairment in hearing. It can be seen that identification audiometry plays an important first step in hearing conservation programs, but it is only one facet to be considered. The Report on Identification Audiometry (1961) alludes to a more complete program, once identification has been ascertained. The Pittsburgh Study (1963) gives us additional definitive information on which to base hearing conservation programs.

Colorado does not have a typical administrative structure for the Hearing Conservation Program. Typically, maternal and child health services fall under the jurisdiction of the State Health Department, and their services are limited to identification and prevention of hearing loss. The term "prevention" should be clarified as it is used in this instance. It refers to health services available to expectant mothers and young children, administered by, or through, the State Health Department. Examples would be pre-natal programs, nutrition programs, and treatment programs for expectant mothers and well baby clinics. The crippled

children's programs may, in some isolated instances, fall under the jurisdiction of state health departments; but more typically, they may be found within state welfare agencies, medical schools, or as an independent state agency. Their role is one of treatment. It may be noted that when these programs exist within different agencies, a close inter-agency working relationship and communication system should exist if complete implementation of the above definition of conservation is to be fulfilled. Both maternal and child health and crippled children services are under the jurisdiction of the State Health Department in Colorado. This structure fosters strength in hearing conservation programs, because of the unifying nature of departmental communication and implementation of identification, diagnosis, treatment, and habilitation or rehabilitation. The Colorado plan is structured in the following way:

1. Prevention of diseases and injuries which might lead to hearing impairment;
2. Audiometric pure-tone screening of children at 25 dB, at 250 Hz, 500 Hz, and 4000 Hz, a 20 dB level at 1000 Hz, and 2000 Hz (ISO 1964);
3. Detailed audiometric evaluation of each child's hearing in terms of type of loss, severity of loss, and etiology for those who fail a second screening test;
4. Treatment, both medically and surgically, is indicated by the otologist;
5. Rehabilitation and habilitation as indicated.

Hearing conservation programs are established on a county-wide basis. Presently, our program is found in 45 of 63 Colorado counties. The usual procedure consists of gaining the approval and cooperation of the local

medical society and the county superintendents of schools. After this has been accomplished, volunteers are enlisted through the cooperation of the local county public health nurse. Usually capable members of a local sorority are chosen. Having been selected, the group attends a training program where a general explanation of the Hearing Conservation Program is presented; and specific detailed training is given them in proper administration of pure-tone and audiometric screening techniques, and the recording of their findings. Training consists of conditioned learning. First, the procedure is explained with the aid of visual aids. Next, a training booklet, which the volunteers retain, is explained. Finally, each trainee practices under the audiologist's supervision until competency is achieved. The volunteers are cautioned that they are not finding children with hearing loss, per se, but are simply separating a group of children with the ability to pass their screening testing criteria from a group who is in need of further study. They may be in need of further study because of misunderstanding directions, fear, ambient noise, purposeful failure to respond, or distraction.

Whenever possible, all children in each school are screened. However, in heavily populated areas, kindergarten, grades one, three, five, seven, nine, and twelve are screened annually. Screening failures are differentiated by a failure to respond to a pure-tone stimulus at any frequency at the above ISO levels for octaves 500 Hz, 1000 Hz, 2000 Hz, and 4000 Hz, either unilaterally or bilaterally. All children who fail the first screening receive a second screening at the earliest possible date. Screening is conducted in the schools in the quietest room available. Scheduling is structured well in advance, so adequate preparation can be completed and school officials informed of the exact time screening will be held. All

screening findings are submitted to the local public health nurse or organizer immediately. All the findings are kept confidential. The children who fail the second screening procedure are seen by State Health Department audiologists who administer screening tests. Following the previously mentioned criteria, if a child exhibits an air-bone gap of ten dB or greater, not only pure-tone air-conduction thresholds, but sensorineural sensitivity measurements, speech reception thresholds, and PB Max scores are obtained as well. All children found to have hearing impairments as indicated by the audiometric evaluations are referred to a family physician for follow-up services. State Health Department otologic clinics are made available to all children referred by the private physicians. Each child who is referred by their family physician must have a complete medical history completed by the public health nurse before being seen at otologic clinic. Otologic clinics are usually held at the local area health department, or in other local buildings that have acceptable noise levels. The clinics are staffed by a Board certified otolaryngologist, a medical social consultant, the local public health nurse, the State Health Department nursing consultant, and two audiologists from the State Health Department. All the findings and recommendations on each child are then forwarded to the referring physician. All the children who have attended the otologic clinic are recalled annually for both medical and audiological follow-up until they are dismissed by the otolaryngologist or reach age 21. All nursing, social, and audiologic data that had been collected on each child is placed in an especially designed patient file. In addition, the audiologic data is collected on an especially designed punched card. Funds are available for medical and surgical treatment, hospitalization fees, x-ray fees, therapy fees, and

the selection, purchase and fitting of hearing aids. One of the unique features of the Colorado program, and one on which little information is obtainable, is the procedure in the obtaining, selection, and fitting of hearing aids in hearing conservation programs. This facet will be covered in the next section of this presentation.

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THE TRAINING INSTITUTION WORKS WITH THE AURALLY HANDICAPPED PRESCHOOL AND SCHOOL-AGE CHILD

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The role of the training institution, traditionally, is the triangle of academic training, community service, and research. In an effective training program, all three aspects are related, ultimately and hopefully resulting in a sound service program. In a real and practical sense, academic training is not possible without a service program. The nature of this institute lends itself to the training institution's commitment to community service, and the focus of this presentation will emphasize this aspect of the triangle.

Contrary to some national thinking that university speech and hearing centers turn loose unprepared students on outpatients, this, in most instances, is not true. I can speak, however, only from a general point of view of university programs in Colorado as well as throughout the country. The philosophy is one that tends toward the old apprenticeship system; that is, full-time and properly trained staff members engaging in evaluation and remediation procedures or in closely supervising students in training. The staff member is not an individual whose activities are confined to the "text book" classroom, leaving the students alone to engage in clinical activities. Since many training programs are

now graduate programs, a number of masters and doctoral students are persons who have engaged in prior professional employment. Their previous work may provide them with a solid core of information and experience as they engage in apprenticeship type of programs with full-time staff members who are operating in accord with the requirements of the American Speech and Hearing Association. These students eventually intern in community service agencies and hospitals in the community.

Many programs have full-time staff members whose activities are confined to audiologic assessment, hearing aid evaluation, and aural rehabilitation. Nursery programs are provided for preschool children until they are eligible for entrance into public school programs. As part of nursery programs, children also receive individual therapy during part of this time; therapy which consists of speechreading, hearing aid orientation, auditory training, and speech therapy, as well as counseling for parents. Children below the age of three in Colorado may receive individual therapy and their parents receive counseling. Some children past the age of two are able to participate in nursery programs since chronological age is not always the best indicator of placement.

During the summer months, when no public school programs for the aurally handicapped are in operation, special group programs are provided in a number of states. Teachers of the deaf may be employed to instruct those children who are regularly enrolled in the public school deaf education programs. Group and individual programs for the minimally hearing impaired preschool child also may continue during the summer.

During the regular school year, aural rehabilitation services are provided for some children who are referred for additional therapy to supplement that therapy received in the public schools or provide therapy not available in the schools. This is an important service in this state

since Colorado public schools have no special training for the minimally hearing impaired child not eligible for the public school deaf program. Speech correctionists are not encouraged to work with these children. This is one area that deserves our attention in that the public schools should be encouraged to hire individuals whose audiologic training would qualify them to work with the minimally impaired child. In addition, I personally feel that training institutions should give consideration to training competent individuals to work with these children. We may perhaps call them hearing therapists or expand the present training to produce speech and hearing therapists. Let me stress that this is a problem in Colorado and is not applicable to all states. In other words, we are talking about a specific type of population who do not require the efforts of a teacher of the deaf.

In addition to remediation procedures available for preschool and school-age children, universities also provide audiologic assessment and hearing aid evaluation. Many also engage in screening programs in public schools. For problem cases, otological, psychological, social work, and other types of consultants often are available. Most universities do require a medical referral prior to seeing any outpatient for evaluation; most other agencies probably have this same stipulation throughout the country.

Some outpatient evaluations and therapy are done, under close supervision, by masters and doctoral students after they have engaged extensively in apprenticeship type training programs. Some referring physicians and agencies prefer that certain evaluations and therapy be done by full-time staff members; these requests are honored if the university has sufficient staff. This is part of the flexibility of an academic training

institution as it fulfills its responsibility in alleviating the critical shortage of speech pathologists and audiologists throughout the nation. In addition, the total resources and staff of speech and hearing centers as well as its professional consultants are available for aurally handicapped children when the need arises.

In summary, the university training program can provide needed services to the aurally handicapped although most are not primarily service oriented; it can provide academic training and with a commitment to research it can provide a total concept program to help meet the problems and needs of the aurally handicapped.

THE ROLE OF THE RESIDENTIAL SCHOOL FOR THE DEAF

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Before defining the role of the residential school for the deaf, I would like to define what I mean when I refer to the deaf. It is those who have had a hearing impairment from birth or early infancy which has prevented the functional reception of speech. This definition does not include the hard of hearing or those who have become deaf after the acquisition of speech.

One of the real problems of the deaf,as described above,is summed up in the report of an Advisory Committee on the Education of the Deaf released to the Secretary of Health, Education, and Welfare in March 1965. One of their findings was summarized in the following statement. "At no age was the median grade average as high as the seventh grade, despite the fact that the bulk of those included were at least of high school leaving age."

This points up the fact that we cannot expect the education of deaf children to proceed along the same lines, and at the same pace, as that of normal hearing children. The education of the deaf is a most complex field; and if best results are to be secured, it will require a program laid out especially for their needs. This can only be done by experienced people with extensive training and knowledge of the deaf. Such a program will require very special procedures to help the deaf develop communicative

skills and language. This, in my estimation, can only be achieved in a well-organized school for the deaf which has a sufficient population for proper gradation and supervision and adequate physical facilities, all directed in a fashion which will enable the deaf child to have a school life in which he is well-adjusted, has a feeling of security, and has full opportunity to give expression to his aptitudes and abilities.

Our educational programs must have one great emphasis: to give the deaf child the use of language which will enable him to break through the confining barrier so that he can obtain the same understanding that people with hearing enjoy. This is an ideal objective; and while it may never be completely attained, we must never fail to place our main emphasis in this area.

With this bit of background information, I would like to outline my philosophy of the functions of a residential school for the deaf. First, it is to furnish an educational program for deaf children who reside in areas where the population of deaf children is not sufficient to warrant a special program for them in the public schools. The Conference of Executives of American Schools for the Deaf will not accredit a program unless it has more than 35 deaf children, at least four qualified teachers of the deaf, and has adequately skilled supervision.

Secondly, the residential school program should be available to those children who are recommended for admission for various reasons, such as inability to adjust to an entirely oral program, difficulty in the home, or transportation difficulties.

Thirdly, the program should provide for secondary-age students who are not able to profit from an integrated program. These students may be academically or vocationally oriented. The academic program is generally

geared to prepare students for entrance to Gallaudet College if their ability level is high enough. The vocational program in most residential schools is specialized to train the non-college bound student into some skilled or semi-skilled area. Surveys have shown that regardless of the background of teaching, only 25 percent of the deaf are able to carry on a conversation with strangers orally. Another 50 percent can converse orally with friends and their immediate family. The remaining 25 percent do not develop oral skills sufficient to use it in any communicative area. The 75 percent in the last two groups generally will obtain better results in a residential school geared to their needs. This does not mean that speech will be neglected or that maximum use of residual hearing will be disregarded. Most schools maintain a speech program throughout the school, and audiological clinics are becoming a standard part of the program.

In developing a program for the benefit of handicapped children in the State of Colorado, we have established a long-range plan to provide for five groupings of children. The five areas we hope to provide programs for are as follows:

(1) The blind; (2) the oral deaf; (3) the manual deaf; (4) the pre-school deaf or blind child; and (5) the multiply handicapped deaf or blind child.

APPENDIX A

INSTITUTE PROGRAM

Wednesday, March 1

8:30	Registration	
9:00	Greetings.	Dr. John Ogden Division of Special Education Department of Education
9:15	Announcements.	A. J. Paulmeno Department of Education
9:25	Overview	Identification of pre-school and school-age aurally handicapped children and development of programs. John O'Neill
10:15	Break.	
10:45	Identification	John O'Neill
11:15	Identification in Colorado	Dave Zink, Mrs. Marion Downs
11:45	Questions	Reactions
12:15	Lunch.	
1:15	. . . . .	The role of the audiologist in evaluation of the pre-school and school-age aurally handicapped child. Jack Willeford, Geary McCandless
2:15	Reaction	John O'Neill
2:30	Break.	
3:00	. . . . .	The role of the otologist in the evaluation of the pre-school and the school-age child. Dr. Victor H. Hildyard
3:45	Reaction	John O'Neill
8:00.	. . . . .	CSHA - Tammen Hall Auditorium - Children's Hospital "Audiology 1967" 19th & Downing

Thursday, March 2

8:45	Announcements	A. J. Paulmeno
9:00	Overview.	Educational aspects of planning for the pre-school and school-age aurally handicapped child. John O'Neill
10:00	. . . . .	
10:30	. . . . .	The role of the teacher of the aurally handicapped. Gladys Whorton, James Kirkley, Milo Henkels, Peggy Chambers
12:15	Lunch	
1:15	. . . . .	Report of activities from agencies working with the aurally handicapped pre-school and school-age child. Colorado Hearing Society--Alice Mason Colorado Health Department--Dave Zink Colorado Education Department - Claude Stanton Public School Programs--Lois Field & Robert Weiland Training Institutions--Jerome Alpiner State School Programs--Armin Turechek
2:30	Questions	Answers
3:00	Break	
3:30	Reactions	John O'Neill

Friday, March 3

9:00	Announcements	A. J. Paulmeno
9:10	. . . . .	Planning for the aurally handicapped child through coordinated efforts John O'Neill
10:00	Break	
10:30	Reactions and Discussions	Lee Cary, Jack Willeford, Morton Flax Joseph Livingston, Marion Downs, Norris Bush
12:15	Lunch	
1:15	. . . . .	Group Discussion
2:15	Break	
2:45	Group Reports	
3:30	Summary	John O'Neill

Appendix B

PARTICIPANTS

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